

Sept. 3 - 9, 2004

The Terra spacecraft is operating nominally. All five instruments are in science mode.

A MODIS lunar calibration roll maneuver was successfully executed on September 3, 2004.

On September 4, 2004, synchronization was temporarily lost on the Terra K-band science downlink making it impossible for EDOS to achieve frame sync on SSR science playback data via TDRSS KSA. The loss occurred during an Solid State Recorder (SSR) science playback via TDRSS KSA while the spacecraft was in the high particle flux region of the South Atlantic Anomaly.

SSR playbacks via Polar Ground Station X-band contacts were successfully conducted to obtain science data and as part of the fault isolation and data loss reduction procedure.

The anomaly was resolved when Terra K-band science downlink synchronization was re-established and EDOS was able to achieve frame sync on SSR science playback (replay) data via TDRSS KSA approximately 5 hours later.

The problem was resolved by executing the "COM_KSAM2_SCIENCE" CECIL procedure in the EOS Operations Center. This was developed for establishing initial K-band science downlink synchronization after launch and for anomalies such as this one. Prior to launch it was foreseen that synchronization could potentially be lost on the K-band downlink.

Indications

are that the most likely cause was a Single Event Upset. Analysis and assessment of data loss is continuing.

A risk assessment and review of the procedure for a proposed future power cycle of the Terra SSR to restore the currently non-functional Printed Wire Assembly boards was held on

September 2, 2004. The review panel consisted of members of the Terra Flight Operations Team,

Office of Systems Safety and Mission assurance personnel, ESMO Project personnel, AETD, and

the original C&DH subsystem engineer from the spacecraft manufacturer. The proposed power

cycle was deemed low-risk by the review panel, and the results of the analysis will be presented to the original SSR vendor for concurrence. A meeting will take place at NASA Headquarters on September 13, 2004, to obtain concurrence to power cycle the Terra SSR at a

future date to be determined.